



# **Secure Electronic Public Health Record Environment**

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**PHIN - Atlanta, Georgia**

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# Purpose & Scope

- Replacement application for the existing MCH Data System and the FP/RH Data System
  - Old System was a DOS Based System
  - Collected Individual Visit Data/Information
  - Collected Minimal Group Data/Information
  - A system for only MCH and FP/RH

# Purpose & Scope (Continued)

- To meet the Infrastructure Priority identified in: *Healthiest Wisconsin 2010: A Partnership Plan to Improve the Health of the Public:*
  - Integrated electronic data and information systems
- Establish a statewide public health database for unduplicated clients
  - Federal, state and local data reporting and surveillance

# Purpose & Scope (Continued)

- Facilitate coordination of client services and reduce duplication of data entry
- Standardize documentation of data for activities and interventions
  - individual and household
  - community and system

# Purpose & Scope (Continued)

- SPHERE will be used to document/provide measurements related to:
  - ↓ Consolidated Contract Objectives
    - ↓ Lead, Prevention, WWWP
  - ↓ Healthiest Wisconsin 2010 Health Priorities
  - ↓ Health Department Review
  - ↓ Broader organizational objectives

- **Started out with one scope - replacing the old systems**
- **The end product was an integrated public health data system!**

# Timeline & Schedule (Original)

- Process started in May 2002
- June - Oct 2002- Review prototype screens/design screens
- Nov-Dec 2002 - Integration Testing
- January 2003 - Pilot Testing (11 sites)
- Jan - Feb 2003 - Trainings
- March 2003 - Statewide Rollout & Conversion
- Feb -December 2003 - Change & Enhancements

# **Timeline & Schedule (Reality)**

- Process started in May 2002
- Sept-Dec 2002- Review prototype screens
- January 2003 - Integration Testing
- February 2003 - Pilot Testing (11 sites)
- March 2003 - Demonstration of the System
- April & May 2003 - Acceptance Testing
- May 2003 - WisLine Web Trainings
- June 2003 - Statewide Rollout & Conversion
- June -December 2003 - Change & Enhancements



# **SPHERE Lead Team**

- Started Meeting in May 2002
- Executive oversight & coordination for application development
- 2 meetings/month (in person/teleconference)
- 23 members
  - State & Local Health Departments, Private Not-for-Profit Agencies, Tribal Agencies
  - Multi-Discipline
  - Overall format & navigation
  - Role based security
  - Training & implementation

# Business Design Teams

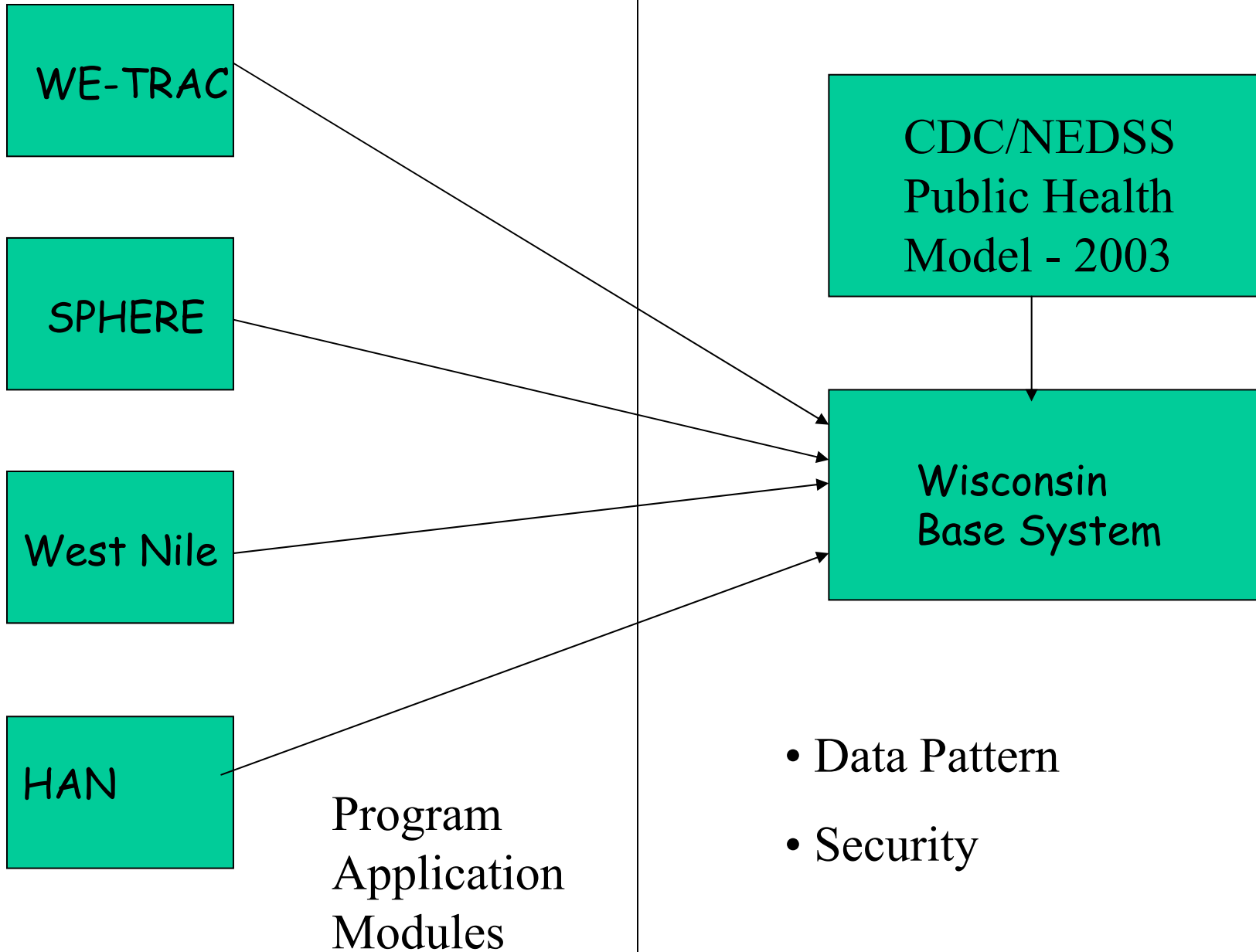
- Assisted with defining business and data requirements
- Five design teams
  - Family Planning/Reproductive Health
  - Perinatal/Infant
  - Children/Adolescent/Family
  - CSHCN
  - Community & System Activities

# **SPHERE Developed by UW DoIT**

- University of Wisconsin Department of Information Technology
  - HAN (Health Alert Network)
    - Secure Web based site
  - CDC NEDSS Base System (Data Model)
  - Project Coordinator regularly attended Lead Team Meetings

# SPHERE- a WEB Based Application

- accessed over the HAN
  - All HAN users will **not** have access to SPHERE
- a “piece” of the integrated information systems
- one of many Program Application modules (PAMS)
- other PAMS will document specialty services
  - WE-TRAC, Communicable Disease Follow-up, West Nile, Environmental



# **SPHERE Role Based Security**

- Provides maximum security
- People are assigned one or more roles based on business rules & confidentiality laws/WI statute
- Current roles are being categorized by:
  - Organization (Local Health Department or other agency)
  - Responsibilities (SPHERE Administrator, SPHERE Security Officer, Public Health/Agency Staff)

# State Wide Codes

- Statewide public health information system required standardization
  - Codes are based on national and state standards
  - SPHERE Lead Team assisted with defining standards
  - State maintains the state wide code tables
  - Established process for adding or editing codes

# Local Codes

- Local organization maintain local codes
  - Funding Source
  - Lab
  - Charge to
  - Provider Clinic
  - Specific Location
- Additional local codes may be added in the future



# SPHERE Format

- Users will document and evaluate public health activities at the following levels of practice:
  - Individual/Household (demographics & activities)
  - Community (activities)
  - System (activities)

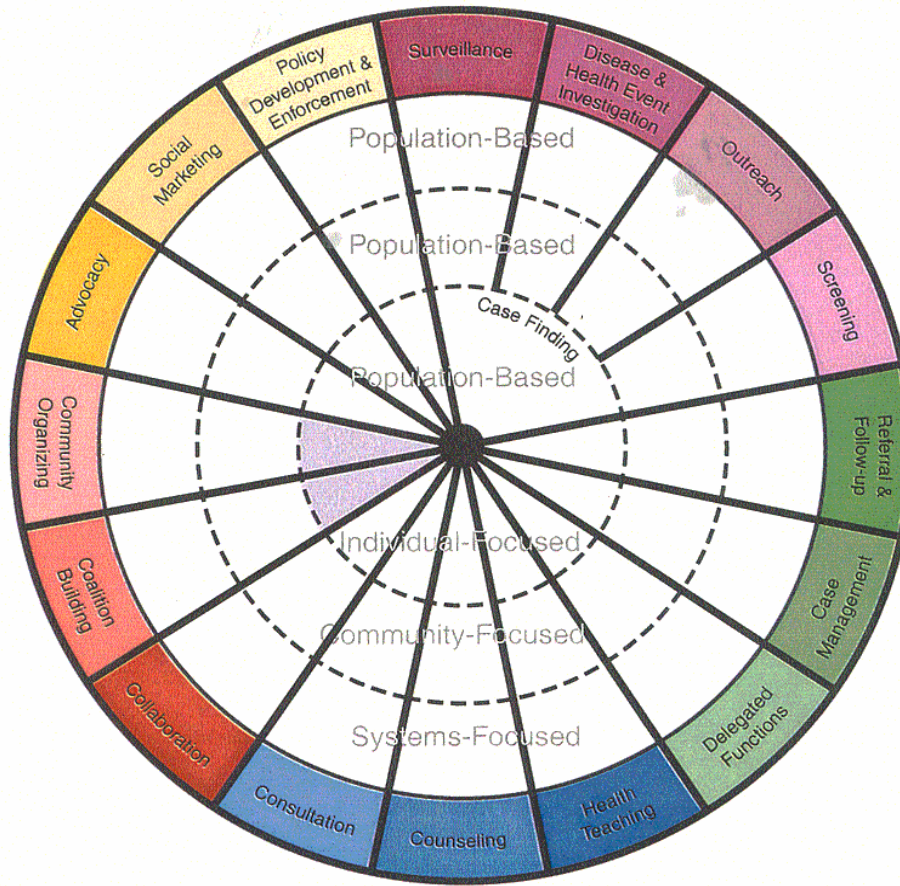
# **Public Health Activities - Level of Practice**

- Individual/Household focused-practice:  
Changes knowledge, attitudes,  
beliefs, practices, and behaviors  
of individuals and households.

# **Public Health Activities - Level of Practice (Continued)**

- Community focused-practice:  
Changes community norms,  
community attitudes, community  
awareness, community practices,  
and community behaviors.
- Systems focused-practice:  
Changes organizations, policies,  
laws, and power structures.

# Minnesota Public Health Interventions Model





# **To Get Minnesota Public Health Intervention Information**

[http://www.health.state.mn.us/divs/chs/  
phn/resources.html](http://www.health.state.mn.us/divs/chs/phn/resources.html)

# **Activities defined by 18 Public Health Interventions (Minnesota Model)**

- Surveillance
- Disease Investigation
- Outreach
- Case Finding
- Screening
- Delegated Function
- Referral/Follow-up
- Case Management
- Health Teaching
- Counseling
- Consultation
- Collaboration
- Coalition Building
- Community Organizing
- Advocacy
- Social Marketing
- Policy Development
- Policy Enforcement

# **SPHERE Statewide Database**

- Required client demographics (non health)
  - First and Last Name
  - Ethnicity/Race
  - Date of Birth
- Other client demographics (non health)
  - Includes some privacy information
- NO client health information is maintained in the statewide database

# Client Information

## Household Information

Client Information	<a href="#">Contact Information</a>	<a href="#">Health Care Coverage</a>	<a href="#">Health Needs</a>	<a href="#">General/Mortality</a>
--------------------	-------------------------------------	--------------------------------------	------------------------------	-----------------------------------

Client Information		<a href="#">Name History</a>
SPHERE ID:	24588	
<b>Last Name:</b>	<input type="text" value="Esten"/>	
<b>First Name:</b>	<input type="text" value="Linda"/>	
Middle Name:	<input type="text"/>	
Maiden Name:	<input type="text"/>	
Status:	<input type="text" value="Active"/>	
<b>Date of Birth:</b>	<input type="text" value="04"/> / <input type="text" value="01"/> / <input type="text" value="2000"/> (mm/dd/yyyy)	
Gender:	<input type="radio"/> Male <input checked="" type="radio"/> Female	
WIC ID:	<input type="text"/> - <input type="text"/>	
<b>Race and Ethnicity</b>		
<b>Ethnicity</b>	<input type="text" value="Not Hispanic or Latino"/>	
<b>Race</b>	<input type="checkbox"/> Amer Indian or Native Alaskan <input type="checkbox"/> Asian <input type="checkbox"/> Black <input checked="" type="checkbox"/> Hawaiian or Pacific Island <input type="checkbox"/> White <input type="checkbox"/> Other <input type="checkbox"/> Unknown	
<input type="button" value="Reset"/> <input type="button" value="Update"/>		



# Contact Information

## Home Address:

Street:  line 1  
 line 2  
 line 3

City:

Town/Village:

State:

County:

Zip Code:

Pre 1950 Housing: ☐ Yes ☐ No ☐ Unknown

Address Comments:

## Mailing Address:

[History](#)

[Copy Home Address To Mailing Address](#)

Do not Contact: ☐

Street:  line 1  
 line 2  
 line 3

City:

Town/Village:

State:

County:

Zip Code:

## Telephone/Email Information

Do not Contact: ☐

Best Time to Contact:

Day Telephone: ()  -  Ext.  Location:

Night Telephone: ()  -  Ext.  Location:

Cell Telephone: ()  -  Ext.

Email Address:

# General/Mortality

## General

Interpreter Needed:

☐ Yes ☐ No

If yes, specify language:

Please Select... ▼

Interpretation provided by:

Please Select... ▼

Highest level of education received:

Please Select... ▼

Primary Occupation:

Please Select... ▼

Marital Status:

☐ Married ☐ Single ☐ Unknown

## Mortality

Is this person deceased?

☐ Yes ☐ No

If yes, deceased date?

/  /  (mm/dd/yyyy)

Reset

Update

# Local Organization Database

- Client Health Demographics
  - Health Information
  - Health Needs
- Individual/Household Activity and Interventions
  - Further protected by role based security
- Community and System Activity and Interventions

# Health Care Coverage

## Health Care Coverage

[History](#)

Date Assessed:

 /  /  (mm/dd/yyyy)

Does the client have health insurance or Medicaid?

☐ Yes ☐ No ☐ Unknown

If yes, coverage type:

Private Health Insurance with medical condition restriction  
Private Health Insurance  
Medicaid  
Medicare  
Other Health Coverage  
Medicaid/Family Planning Waiver  
Badger Care

If yes, HMO or managed care:


Please select... 

Does the client have a primary care provider?

☐ Yes ☐ No ☐ Unknown

If yes, name of primary care provider:

Usual site for client's routine health care:


Please select... 

Usual health care site name:

Does the client have dental coverage?:

☐ Yes ☐ No ☐ Unknown

If yes, dental coverage type:

Please select... 

Does the client have a dentist or oral health provider?: ☐ Yes ☐ No ☐ Unknown

If yes, name of dental care provider:

Medical Assistance Number

(Only applicable if Medical Assistance/  
Badger Care was selected above):

Reset

Update

# Health Needs

## Health Needs

Date Assessed:

/  /  (mm/dd/yyyy)

Exposure to second hand smoke:

☐ Yes ☐ No ☐ Unknown

Has the woman been pregnant during the current year?:

☐ Yes ☐ No ☐ Unknown

Does the client have a chronic medical, behavioral, emotional or other health condition that has lasted or is expected to last 12 months or more?:

☐ Yes ☐ No ☐ Unknown

If yes, complete the following three fields.

The client has had a diagnosis by a health care provider:

☐ Yes ☐ No ☐ Unknown

Primary Diagnosis:

None

Secondary Diagnosis:

None

Vision Impaired:

☐ Yes ☐ No ☐ Unknown

Hearing Impaired:

☐ Yes ☐ No ☐ Unknown

Received SSI:

☐ Yes ☐ No ☐ Unknown

Reset

Update

# Household Information

## Household Information

**1 Client**    [Add a new client to this household](#) | [Move existing client to this household](#)

Primary	DOB	First	Last	Relation to Primary	Action
<input checked="" type="radio"/>	04/01/2000	Linda	Esten	<input type="text" value="-----"/>	<input type="text" value="-----"/>

### Actions

Activities - View all of a client's activities.

Demographics - View a client's personal, contact, and health information.

Move - Move a client their own, new household.

## Household Information

**Household Type**

**Primary's Home Address -** [update](#)

No Address on Record

**Primary's Mailing Address -**

[update](#)

No Address on Record

**Size of Household**

**Annual Gross Income Range**

**or Income Amount**

**Date Finances Assessed**

/  /  (mm/dd/yyyy)

**Poverty Level**

[update](#)

# Individual Activity

## Add a Client Activity

**Date of Activity:** 05 / 09 / 2003 mm/dd/yyyy

**Household Member(s):** ☒ Linda Esten - Primary Contact

**Staff Name(s):**

- Andersen, Joyce
- Gainey, Michelle
- Gothard, Mary
- Herrick, Patti
- Katcher, Lilah
- Kratz, Susan
- Kvale, Katherine
- Peters, Debi

**Activity Method:** Please Select...

**Location:** Not Applicable  
(applies to face-to-face activities)

**Specific Location:** Not Applicable

**Who:** Not Applicable

**Specific Who:**

**Program:** Please Select...

**Services:** Not Applicable

**Referred By:** Please Select...

**Status:** Please Select...

## Funding:

- DPH/Bioterrorism
- DPH/Childhood Lead Program
- DPH/Contract
- DPH/Immunization
- DPH/MCH contract
- DPH/Prevention contract
- DPH/Reproductive contract
- DPH/Tobacco Board contract

## Interventions:

[add new](#)

## Charge To:

- GPR Funds
- Medicaid
- State Pay Source

## Health and Infrastructure Priority and Health Topics:

- ☐ Access to Primary and Preventive Health Services
- ☐ Adequate and Appropriate Nutrition
- ☐ Alcohol and Other Substance Use and Addiction
- ☐ Environmental and Occupational Health Hazards
- ☐ Existing, Emerging, and Re-emerging Communicable Diseases
- ☐ High Risk Sexual Behavior
- ☐ Intentional and Unintentional Injuries and Violence
- ☐ Mental Health and Mental Disorders
- ☐ Overweight, Obesity, and Lack of Physical Activity
- ☐ Social and Economic Factors that Influence Health
- ☐ Tobacco Use and Exposure
- ☐ Community health improvement processes and plans
- ☐ Coordination of state/local public health system partnerships
- ☐ Equitable, adequate, and stable financing
- ☐ Integrated electronic and information systems
- ☐ Sufficient, competent workforce

# Individual Activity

Activity Time:  :  hh:mm

Record Keeping Time:  :  hh:mm

Travel Time:  :  hh:mm

Activity Miles:

Next Activity Date:  /  /  mm/dd/yyyy

Next Activity Reason: 

Care/Service Coordination  
Comprehensive Exam  
Counseling  
Immunization

Notes: [Add/View Notes](#)



# Interventions

## Activity Interventions

Select all interventions that are applicable to this Activity.

### Select Interventions

<input type="checkbox"/> Surveillance	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Disease & Health Event Investigation	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Outreach	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Case Finding	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Screening	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Referral & Follow-up	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Case Management	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Delegated Functions	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Health Teaching	<a href="#">Sub-Interventions</a>	<a href="#">Results</a>
<input type="checkbox"/> Counseling	<a href="#">Sub-Interventions</a>	<a href="#">Results</a>
<input type="checkbox"/> Consultation		
<input type="checkbox"/> Collaboration		
<input type="checkbox"/> Coalition Building	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Community Organizing	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Advocacy	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Social Marketing		
<input type="checkbox"/> Policy Development	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Policy Enforcement	<a href="#">Sub-Interventions</a>	
<input type="checkbox"/> Conversion		

[Update](#) | [Close Window](#)

# Subinterventions

## Activity Sub-Interventions

**Intervention:** Case Management

### Select Sub-Interventions

- |                                     |   |                         |
|-------------------------------------|---|-------------------------|
| <input type="checkbox"/>            | CSHCN Service Coordination                  | <a href="#">Details</a> |
| <input type="checkbox"/>            | Child Care Coordination                     | <a href="#">Details</a> |
| <input type="checkbox"/>            | Infant Assessment                           | <a href="#">Details</a> |
| <input type="checkbox"/>            | POCAN                                       |                         |
| <input checked="" type="checkbox"/> | Postpartum Assessment                       | <a href="#">Details</a> |
| <input type="checkbox"/>            | Postpartum Care Plan                        |                         |
| <input type="checkbox"/>            | Postpartum Ongoing Monitoring               |                         |
| <input type="checkbox"/>            | Prenatal Assessment                         | <a href="#">Details</a> |
| <input type="checkbox"/>            | Prenatal Care Plan                          |                         |
| <input type="checkbox"/>            | Prenatal Ongoing Monitoring                 |                         |
| <input type="checkbox"/>            | Targeted Case Management Assessment         | <a href="#">Details</a> |
| <input type="checkbox"/>            | Targeted Case Management Care Plan          |                         |
| <input type="checkbox"/>            | Targeted Case Management Ongoing Monitoring |                         |
| <input type="checkbox"/>            | WI Childhood Lead Program                   |                         |
| <input type="checkbox"/>            | WI Well Woman Program                       |                         |

[Update](#) | [Back to Interventions](#) | [Close Window](#)

# Detail Screens

Postpartum Assessment	
Date of activity:	05/09/2003
	<input type="radio"/> Initial Assessment <input type="radio"/> Follow-up Assessment
Date of birth or date pregnancy ended:	<input type="text"/> / <input type="text"/> / <input type="text"/> mm/dd/yyyy
Pregnancy Outcome:	<input type="text" value="Select..."/>
Type of delivery:	<input type="radio"/> Vaginal <input type="radio"/> Cesarean
<a href="#">Add Birth Record</a>	
Total weight gain:	<input type="radio"/> Gain <input type="radio"/> Loss <input type="text"/> lb. <input type="text"/> oz.
Total number of prenatal medical visits:	<input type="text"/>
Postpartum medical visit:	<input type="radio"/> Within 6 weeks <input type="radio"/> 7-8 weeks <input type="radio"/> Scheduled <input type="radio"/> Not scheduled
Postpartum contraceptives:	<input type="radio"/> Yes <input type="radio"/> No
Postpartum cigarette smoking:	<input type="radio"/> Yes <input type="radio"/> No If yes, number of cigarettes per day: <input type="text"/>
Postpartum alcohol use:	<input type="radio"/> Yes <input type="radio"/> No If yes, number of drinks per week: <input type="text"/>
Depression screening:	<input type="radio"/> Yes <input type="radio"/> No           If yes, tool used: <input type="text" value="Select..."/>
Infant Adoption/foster home placement:	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Not Applicable
<input type="button" value="Reset"/> <input type="button" value="Update"/>	

# Community Activity

## Add a Community Activity

**Enter Date of Activity:**  /  /  mm/dd/yyyy

**Staff Name(s):**

**Location:**

**Specific Location:**

**Program:**

**Services:**

**Funding:**

**Interventions:** [add new](#)

**Health and Infrastructure Priority:**   
☐ Access to Primary and Preventive Health Services   
☐ Adequate and Appropriate Nutrition   
☐ Alcohol and Other Substance Use and Addiction   
☐ Environmental and Occupational Health Hazards   
☐ Existing, Emerging, and Re-emerging Communicable Diseases   
☐ High Risk Sexual Behavior

- ☐ Intentional and Unintentional Injuries and Violence
- ☐ Mental Health and Mental Disorders
- ☐ Overweight, Obesity, and Lack of Physical Activity
- ☐ Social and Economic Factors that Influence Health
- ☐ Tobacco Use and Exposure
- ☐ Community health improvement processes and plans
- ☐ Coordination of state/local public health system partnerships
- ☐ Equitable, adequate, and stable financing
- ☐ Integrated electronic and information systems
- ☐ Sufficient, competent workforce

**Audience Focus:**

Audience Focus	Females	Males	Total
<input type="checkbox"/> 1. Infants (<12 mos)	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> 2. Preschool	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> 3. School age (5-11 yrs)	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> 4. Adolescent (12-18 yrs)	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> 5. Adults (19-65 yrs)	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> 6. Older adults (> 65 yrs)	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Business/community/civic	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> CSHCN	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> General public	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Legislators/policy makers	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Parents	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Postpartum women	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Preconceptional	<input type="text"/>	<input type="text"/>	<input type="text"/>

# Community Activity (Cont.)

<input type="checkbox"/> Preconceptional	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Pregnant Women	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Professionals/Providers	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Religious/faith based organizations	<input type="text"/>	<input type="text"/>	<input type="text"/>

Special Populations:

☐ Lesbian/Gay/Bisexual/Transgender

☐ Race/Ethnicity

Methods to Support Intervention:

Method	Total Population Reached
<b>ELECTRONIC</b>	
<input type="checkbox"/> CD-Rom	<input type="text"/>
<input type="checkbox"/> Community Access Table	<input type="text"/>
<input type="checkbox"/> Email	<input type="text"/>
<input type="checkbox"/> Listserv	<input type="text"/>
<input type="checkbox"/> Web Course Tools	<input type="text"/>
<input type="checkbox"/> Web site	<input type="text"/>
<b>MATERIALS</b>	
<input type="checkbox"/> Direct Mailings	<input type="text"/>
<input type="checkbox"/> Displays/exhibits	<input type="text"/>
<input type="checkbox"/> Incentives	<input type="text"/>
<input type="checkbox"/> Pamphlets/brochures/fact sheets	<input type="text"/>
<input type="checkbox"/> Posters	<input type="text"/>

**MEDIA**

☐ Billboards

☐ Print

☐ Public Transit

☐ Radio

☐ TV

Results/Outcome:

Documentation of additional result/outcome information:

Charge To:

GPR Funds  
 Medicaid  
 State Pay Source

Activity Time:  :  hh:mm

Record Keeping Time:  :  hh:mm

Travel Time:  :  hh:mm

Activity Miles:

# System Activity

## Add a System Activity

**Enter Date of Activity:**

05 / 09 / 2003 mm/dd/yyyy

**Staff Name(s):**

Andersen, Joyce  
Dusso, Donna  
Gainey, Michelle  
Gothard, Mary

**Location:**

Please Select...

**Specific Location:**

Please Select...

**Program:**

Please Select...

**Services:**

Please Select...

**Funding:**

DPH/Immunization  
DPH/MCH contract  
DPH/Prevention contract  
DPH/Reproductive contract  
DPH/Tobacco Board contract  
DPH/Tobacco CDC contract  
DPH/WIC contract  
DPH/WWWP contract

**Interventions:**

[add new](#)

**Health and Infrastructure Priority:**

- ☐ Access to Primary and Preventive Health Services
- ☐ Adequate and Appropriate Nutrition
- ☐ Alcohol and Other Substance Use and Addiction
- ☐ Environmental and Occupational Health Hazards
- ☐ Existing, Emerging, and Re-emerging Communicable Diseases
- ☐ High Risk Sexual Behavior

# **Lessons Learned & Benefits Gained**

- Importance of Dedicated Full-time Staff on the Project - Driving Force
  - Important to have a team of IT Staff and Program Staff as equal partners
- Lead Team Involvement
  - Maintaining involvement
  - Involved at every step of the process
  - Involved in decision making
  - Assisted in getting buy-in from local users
- Timelines are meant to be changed!

# Challenges

- Getting Local Users to buy into:
  - a statewide system with shared demographics
  - standardized fields/codes
  - professionals doing data entry
- Development of SPHERE occurring at the same time as implementation of HIPAA
- Web Based
  - Agencies with limited access to the WEB
  - Workers in the field need a way to get data into the Web based system



# Use of PHIN in SPHERE Efforts

- Lead Team Model
  - Users coming together to do the design
- NEDSS Data Model/Pattern
  - Had to add to tables
  - Activities in NEDSS minimal compared to activities in SPHERE
- Role Based Security
  - Idea from NEDSS and Adopted by SPHERE

# More Information

- Contact Debi Peters  
Wisconsin Division of Public Health  
608-261-9433  
[peterdl@dhfs.state.wi.us](mailto:peterdl@dhfs.state.wi.us)